

may be determined according to an explicit rate ABR algorithm. Because bandwidth is set aside in the network entity 220 for the PCRs of the real time VPCs 222A and because the bit rates of the non-real time VPCs 224A are controlled by the feedback mechanism 232, cell discard is not expected to be required in either the CBR queue 226 or the ABR queue 228. Where ABR flow control is adopted as the flow control mechanism of the network entity 220, resource management (RM) cells are employed to embody and transmit explicit rate information to the respective sources of the non-real time traffic by way of the outgoing non-real time VPCs 224B.

**IN THE CLAIMS:**

*Please amend Claim 1 as follows:*

1. A method for transmitting non-real time traffic in a connection oriented communications network, the network comprising a network core which includes a core source and a core destination, the core source and the core destination having a path therebetween, the path having one of a plurality of classes of transmission service, the non-real time traffic being received at the core source from a plurality of connections and each of the plurality of connections having one of the plurality of classes of transmission service such that at least two of the plurality of connections do not respectively have a same class of transmission service, the method comprising the steps of:

- (a) at the core source, aggregating the non-real time traffic received from said plurality of connections onto the path, the non-real time traffic being transmitted on the path without regard to which of the plurality of connections the non-real time traffic is associated and without regard to the class of transmission service of such plurality of connections;

- (b) at the core destination, segregating the non-real time traffic so transmitted on the path according to which of the plurality of connections the non-real time traffic is associated; and

wherein flow control is applied between the core source and the core destination to thereby regulate the rate of transmission of the non-real time traffic along the path and wherein the path is provisioned with a guaranteed transmission bandwidth.

*Please amend Claim 2 as follows:*

- 2. The method of Claim 1, wherein the connection oriented communications network is an ATM network, the plurality of connections are Virtual Channel Connections (VCCs), the path is a non-real time Virtual Path Connection (VPC), the non-real time traffic is ATM traffic and plurality of classes of transmission service are ATM service categories.

*Please amend Claim 3 as follows:*

- 3. The method of Claim 2, wherein the flow control applied between the core source and the core destination includes a flow control algorithm whereby the rate of transmission of the non-real time traffic on the path is regulated by providing feedback information to the core source concerning congestion at a contention point on the path.

*Please amend Claim 4 as follows:*

- 4. The method of Claim 2, wherein the flow control applied between the core source and the core destination includes a flow control algorithm whereby the rate of transmission of the non-

real time traffic on the path is regulated by providing an explicit rate of transmission to the core source.

*Please amend Claim 6 as follows:*

6. The method of Claim 1, wherein at least one of the plurality of connections aggregated onto the path is provisioned with a guaranteed bandwidth and the guaranteed transmission bandwidth of the path is obtained by summing the guaranteed transmission bandwidths for the at least one of the plurality of connections aggregated onto the path.

*Please amend Claim 7 as follows:*

7. The method of Claim 6, wherein the guaranteed transmission bandwidth for the at least one of the plurality of connections is a guaranteed minimum transmission bandwidth and the guaranteed transmission bandwidth for the path is a guaranteed minimum transmission bandwidth.

*Please amend Claim 8 as follows:*

8. The method of Claim 7, wherein transmission bandwidth in the network core is allocated between real time traffic and non-real time traffic, and wherein a share of the transmission bandwidth in addition to the guaranteed minimum transmission bandwidth for the path is made available to the path if the transmission bandwidth allocated to the real time traffic is unused.

*Please amend Claim 9 as follows:*

9. The method of Claim 7, wherein a share of the transmission bandwidth in addition to the guaranteed minimum transmission bandwidth for one of the plurality of connections is made available to the one of the plurality of connections if the transmission bandwidth allocated to another of the plurality of connections is unused.

*Please amend Claim 10 as follows:*

10. The method of Claim 5, wherein the core source to core destination flow control applied between the core source and the core destination is provided by a plurality of ABR flow control segments between the core source and the core destination.

*Please amend Claim 11 as follows:*

11. The method of Claim 10, wherein the core source further comprises a set of queues each corresponding to one of the plurality of classes of transmission service that are associated with the plurality of connections, and wherein the non-real time traffic received over said each of the plurality of connections is queued in the queue associated with the class of transmission service associated with each connection before aggregating the non-real time traffic onto the path.

*Please amend Claim 12 as follows:*

12. The method of Claim 10, wherein the core source further comprises a queue for said each of the plurality of connections and wherein the non-real time traffic received over said each of the plurality of connections is queued in the queue associated with the connection before aggregating the non-real time traffic onto the path.

*Please amend Claim 13 as follows:*

13. The method of Claim 11, wherein traffic management is applied to the non-real time traffic at said core source.

*Please amend Claim 14 as follows:*

14. The method of Claim 13, wherein the traffic management comprises scheduling of the plurality of connections onto the path.

*Please amend Claim 15 as follows:*

15. A network entity for use in a connection oriented communications network, the communications network comprising a network core wherein traffic entering the network core is aggregated from a plurality of connections onto paths within the network core and wherein traffic exiting the network core is segregated from said paths onto connections outside the network core, the traffic comprising real time traffic and non-real time traffic, the real time traffic and the non-real time traffic each being aggregated onto respective real time paths and non-real time paths, each of the non-real time paths having one of a plurality of classes of transmission service, each of the plurality of connections carrying non-real time traffic having one of the plurality of classes of transmission service such that at least two of the plurality of connections aggregated onto a non-real time path do not respectively have a same class of transmission service, each of the non-real time paths is provisioned with a guaranteed transmission bandwidth, the real time traffic on each real time path being transmitted from a corresponding core source to a corresponding core destination according to a first class of

transmission service and the non-real time traffic on each non-real time path being transmitted from a corresponding core source to a corresponding core destination according to a second class of transmission service, and wherein flow control is applied between the core source and the core destination corresponding to each non-real time path to thereby regulate the rate of transmission of the non-real time traffic along said non-real time path, the network entity comprising:

- (a) a first queue for storing real time traffic received at the network entity over at least one of said real time paths;
- (b) a second queue for storing non-real time traffic received at the network entity over at least one of said non-real time paths;
- (c) a scheduling mechanism for servicing the first and second queues to thereby respectively generate non-real time traffic and real time traffic in an outgoing direction; and
- (d) a flow control mechanism for regulating the rate of transmission of said non-real time traffic received at the network entity along each of said non-real time paths.

*Please amend Claim 17 as follows:*

17. The network entity of Claim 16, wherein the flow control mechanism thereof provides an explicit rate of transmission to each of the corresponding core sources of the non-real time traffic received at the network element.

*Please amend Claim 21 as follows:*

21. The network entity of claim 17, wherein the connection oriented communications network is an ATM network, each of the real time paths is a real time Virtual Path Connection (VPC), each of the plurality of connections from which non-real time traffic on the non-real time

paths is aggregated is a non-real time Virtual Channel Connection (VCC), the non-real time traffic is ATM traffic and plurality of classes of transmission service are ATM service categories.

*Please amend Claim 23 as follows:*

23. The network entity of claim 22, wherein the flow control mechanism provides the explicit rate of transmission to the corresponding core source for the non-real time traffic by way of information carried in Resource Management (RM) cells.

*Please amend Claim 24 as follows:*

24. The network entity of claim 23, wherein the network entity receives the real time traffic over a plurality of real time paths, wherein each real time path is associated with a Peak Cell Rate (PCR) and wherein the flow control mechanism determines the explicit rate of transmission for each of the non-real time paths by deriving an available bandwidth for the non-real time paths based on the PCRs of the real time paths and allocating a share of the available bandwidth to each of the non-real time paths.

*Please amend Claim 25 as follows:*

25. A connection oriented communications network, the communications network comprising a network core wherein traffic entering the network core is aggregated from a plurality of connections onto paths within the network core and wherein traffic exiting the network core is segregated from said paths onto connections outside the network core, the traffic comprising real time traffic and non-real time traffic, the non-real time traffic which enters the

network core and is aggregated onto a path is received from connections that each have one of a plurality of classes of transmission service such that at least two connections have classes of transmission service different from each other, the real time traffic and the non-real time traffic each being aggregated onto respective real time paths and non-real time paths, each of the non-real time paths having one of the plurality of classes of transmission service, each of the non-real time paths is provisioned with a guaranteed transmission bandwidth, the real time traffic on each real time path being transmitted from a corresponding core source to a corresponding core destination according to a first class of path transmission service and the non-real time traffic on each non-real time path being transmitted from a corresponding core source to a corresponding core destination according to a second class of path transmission service, and wherein flow control is applied between the core source and the core destination corresponding to each non-real time path to thereby regulate the rate of transmission of the non-real time traffic along each said non-real time path.

**IN THE DRAWINGS:**

It is requested that the one sheet of drawings containing Figure 5 be cancelled and replaced with the enclosed substitute sheet, for which a duplicate has been submitted to show the proposed drawing changes in red.

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